

Amendment to the Claims:

Please amend the claims as follows:

Please cancel claims 44 and 45, and 51 to 56, without prejudice.

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An isolated or recombinant polynucleotide comprising (a) a polynucleotide having at least 70% sequence identity to a polynucleotide encoding an enzyme comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity, or (b) a sequence complementary to the sequence of (a).

Claim 2 (previously presented): The polynucleotide of claim 1, wherein the polynucleotide comprises a DNA.

Claim 3 (previously presented): The polynucleotide of claim 1, wherein the polynucleotide comprises an RNA.

Claim 4 (previously presented): The polynucleotide of claim 2, which encodes an enzyme comprising amino acids 1 to 346 of SEQ ID NO:4.

Claim 5 (currently amended): An isolated or recombinant polynucleotide comprising (a) a polynucleotide having at least a 90% identity to a polynucleotide encoding an enzyme having a sequence as set forth in SEQ ID NO:4 and having alpha galactosidase activity, or (b) a sequence complementary to the sequence of (a).

Claim 6 (previously presented): A vector comprising the polynucleotide of claim 1.

Claim 7 (previously presented): A host cell comprising the vector of claim 6.

Claim 8 (currently amended): A process for producing a polypeptide comprising expressing from the host cell of claim 7 a polypeptide encoded by [[said DNA]] the polynucleotide of claim 1, or, expressing from a host cell the polynucleotide of claim 1.

Claim 9 (previously presented): A process for producing a cell that expresses the polypeptide encoded by a DNA contained in a vector comprising transforming or transfecting the cell with the vector of claim 6.

Claims 10 to 12 (canceled)

Claim 13 (currently amended): The isolated or recombinant polynucleotide of claim 1, wherein the sequence identity is [[polynucleotide has]] at least 95% [[identity to the polynucleotide]].

Claim 14 (currently amended): The isolated or recombinant polynucleotide of claim 13, wherein the sequence identity is [[polynucleotide has]] at least 97% [[identity to the polynucleotide]].

Claims 15 to 16 (canceled)

Claim 17 (currently amended): The isolated or recombinant polynucleotide of claim 2, wherein the DNA [[is]] comprises cDNA or synthetic DNA.

Claim 18 (currently amended): The isolated or recombinant polynucleotide of claim 2, wherein the DNA is single stranded.

Claim 19 (currently amended): The isolated or recombinant polynucleotide of claim 18, wherein the single stranded DNA comprises a coding sequence of a polypeptide having alpha galactosidase activity.

Claim 20 (currently amended): The vector of claim 6, wherein the [[DNA]] polynucleotide is operably linked to an expression control sequence suitable to direct mRNA synthesis.

Claim 21 (previously presented): The vector of claim 6, wherein the vector comprises a plasmid, a viral particle, or a phage.

Claim 22 (previously presented): The vector of claim 6, wherein the vector comprises an expression vector.

Claim 23 (previously presented): The polynucleotide of claim 2, operably linked to an expression control sequence.

Claim 24 (currently amended): An isolated or recombinant polynucleotide (a) comprising a nucleic acid that hybridizes to a polynucleotide that encodes a polypeptide having a sequence as set forth in SEQ ID NO:4 wherein the polypeptide has alpha galactosidase activity, and the hybridizing conditions include 0.9 M NaCl, 50 mM NaH₂PO₄, pH 7.0, 5.0 mM Na₂EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C, or (b) a sequence complementary to the sequence of (a).

Claim 25 (previously presented): The isolated or recombinant polynucleotide of claim 24, wherein the polynucleotide that encodes SEQ ID NO:4 comprises SEQ ID NOS:1, 2, or 3.

Claim 26 (canceled)

Claim 27 (currently amended): The isolated or recombinant polynucleotide of claim 24, wherein the polynucleotide hybridizes [[polynucleotides hybridize]] under conditions further comprising a wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA) containing 0.5% SDS at room temperature.

Claim 28 (currently amended): The isolated or recombinant polynucleotide of claim [[24]] 27, wherein the wash step further comprises another wash in fresh 1X SET at $T_m - 10^\circ\text{C}$, wherein T_m is a melting temperature for hybridized polynucleotides.

Claim 29 (currently amended): A probe [[An isolated or recombinant nucleic acid]] comprising at least 12 contiguous nucleotides of the polynucleotide of claim 1 or claim 24, wherein the probe can identify by hybridization a nucleic acid encoding an alpha galactosidase.

Claim 30 (currently amended): A probe [[An isolated or recombinant nucleic acid]] comprising at least 12 contiguous nucleotides of a polynucleotide encoding SEQ ID NO:4, wherein the probe can identify by hybridization a nucleic acid encoding an alpha galactosidase.

Claims 31 to 33 (canceled)

Claim 34 (currently amended): An isolated or recombinant nucleic acid consisting of (a) at least 12 contiguous nucleotides of a polynucleotide encoding SEQ ID NO:4 wherein the isolated or recombinant nucleic acid comprises one of a pair of primers capable of amplifying a polynucleotide encoding a polypeptide having alpha galactosidase activity or is capable of hybridizing to a nucleic acid encoding a polypeptide having alpha galactosidase activity under conditions including 0.9 M NaCl, 50 mM NaH_2PO_4 , pH 7.0, 5.0 mM Na_2EDTA , 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C and a wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na_2EDTA) containing 0.5% SDS at room temperature, or (b) a sequence complementary to the sequence of (a).

Claim 35 (canceled)

Claim 36 (currently amended): The probe [[isolated or recombinant nucleic acid]] of claim 29, or claim 30 [[or claim 34]], wherein the [[sequence is]] probe comprises at least 30 [[bases]] contiguous nucleotides.

Claim 37 (currently amended): The probe ~~[[isolated or recombinant nucleic acid]]~~ of claim 36, wherein the ~~[[sequence is]]~~ probe comprises at least 50 ~~[[bases]] contiguous nucleotides.~~

Claims 38 to 41 (canceled)

Claim 42 (currently amended): ~~The ~~[[A polynucleotide]] probe comprising the isolated or recombinant nucleic acid~~ of claim 29, wherein the probe is capable of hybridizing to a nucleic acid encoding a polypeptide having alpha galactosidase activity under conditions comprising 0.9 M NaCl, 50 mM NaH₂PO₄, pH 7.0, 5.0 mM Na₂EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C and a wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA) containing 0.5% SDS at room temperature.~~

Claim 43 (currently amended): ~~The ~~[[A polynucleotide]] probe comprising the isolated or recombinant nucleic acid~~ of claim 30, wherein the probe is capable of hybridizing to a nucleic acid encoding a polypeptide having alpha galactosidase activity under conditions comprising 0.9 M NaCl, 50 mM NaH₂PO₄, pH 7.0, 5.0 mM Na₂EDTA, 0.5% SDS, 10x Denhardt's, and 0.5 mg/mL polyriboadenylic acid at 45°C and a wash step of 1X SET (150 mM NaCl, 20 mM Tris hydrochloride, pH 7.8, 1 mM Na₂EDTA) containing 0.5% SDS at room temperature.~~

Claims 44 and 45 (canceled)

Claim 46 (previously presented): An isolated or recombinant nucleic acid completely complementary to a nucleic acid having at least a 70% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 47 (previously presented): The isolated or recombinant nucleic acid of claim 46, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 80% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 48 (previously presented): The isolated or recombinant nucleic acid of claim 47, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 90% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 49 (previously presented): The isolated or recombinant nucleic acid of claim 48, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 95% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 50 (previously presented): The isolated or recombinant nucleic acid of claim 49, wherein the isolated or recombinant nucleic acid is completely complementary to a nucleic acid having at least a 97% sequence identity to a nucleic acid encoding a polypeptide comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claims 51 to 56 (canceled)

Claim 57 (previously presented): The isolated or recombinant polynucleotide of claim 1, wherein the isolated or recombinant polynucleotide has at least a 80% sequence identity to a nucleic acid encoding an enzyme comprising an amino acid sequence set forth in SEQ ID NO:4 and having alpha galactosidase activity.

Claim 58 (previously presented): The isolated or recombinant polynucleotide of claim 1, wherein the alpha galactosidase activity comprises hydrolysis of raffinose, stachyose or verbascose.

Claim 59 (previously presented): The isolated or recombinant polynucleotide of claim 58, wherein the alpha galactosidase activity comprises hydrolysis of raffinose, stachyose or verbascose in beans.

Claim 60 (previously presented): The isolated or recombinant nucleic acid of claim 1, wherein the polynucleotide comprises a sense sequence or an antisense sequence.

Claim 61 (previously presented): The polynucleotide of claim 18, wherein the single stranded DNA comprises an antisense sequence.

Claim 62 (currently amended): The probe [[isolated or recombinant nucleic acid fragment]] of claim 29, or claim 30 [[or claim 34]], wherein the [[sequence is]] probe comprises at least 15 [[bases]] contiguous nucleotides.

Claim 63 (currently amended): An isolated or recombinant polynucleotide comprising (a) a polynucleotide encoding a polypeptide having a sequence as set forth in SEQ ID NO:4, or (b) a sequence complementary to the sequence of (a).

Claim 64 (previously presented): The host cell of claim 7, wherein the cell is a bacterial cell, a fungal cell, a yeast cell, an insect cell, a plant cell or an animal cell.

Claim 65 (previously presented): The host cell of claim 64, wherein the animal cell is a mammalian cell.

Claim 66 (previously presented): The isolated or recombinant polynucleotide of claim 1, wherein the polynucleotide has at least a 95% sequence identity to the polynucleotide encoding the enzyme.

Claim 67 (previously presented): The isolated or recombinant polynucleotide of claim 1, wherein the polynucleotide has at least a 97% sequence identity to the polynucleotide encoding the enzyme.

Claim 68 (new): The isolated or recombinant polynucleotide of claim 63, wherein the polynucleotide comprises a DNA.

Claim 69 (new): The isolated or recombinant polynucleotide of claim 63, wherein the polynucleotide comprises an RNA.

Claim 70 (new): The isolated or recombinant polynucleotide of claim 63, wherein the polynucleotide encodes an enzyme comprising amino acids 1 to 346 of SEQ ID NO:4.